POLYNOIDAE (POLYCHAETA) FROM THE CANARY ISLANDS

M. C. Brito, J. Núñez and J. J. Bacallado

ABSTRACT

This paper is a contribution to the study of the family Polynoidae (Polychaeta) from the Canary Islands. The material examined has been collected by the authors from 1975 to 1989. A total of 18 species was found belonging to 8 genera: Gesiella (1), Polynoe (1), Adyte (1), Subadyte (1), Harmothoe (11), Alentia (1), Lepidasthenia (1) and Lepidonotus (1). Ten species are new to this fauna and one, Harmothoe cascabullicola, is new to science. Furthermore, the genera Polynoe, Adyte and Lepidasthenia are recorded for the first time in the Canary Islands.

The Polychaeta of the Canary Islands are enumerated in the provisional catalogue of Núñez et al. (1984), in which are recorded 148 species, 12 of which belong to the family Polynoidae. Samples from the Canary coastline were examined and members of Polynoidae studied. A total of 173 specimens was studied, belonging to 7 subfamilies, 8 genera, and 18 species, of which 9 species are recorded for the first time in the Canarian fauna. Worthy of note is the large number of species belonging to the genus *Harmothoe* (11), one of which, *H. cascabullicola* is new.

METHODS

The material examined was collected from 1975 to 1989, from 61 stations, at 45 localities on the Canary coasts (Fig. 1). The list of stations, with their localities, types of substrate and collecting data are listed in Table 1.

The methods used in collecting depended on the type of substrate. The subtidal samples from the coral community, *Dendrophyllia ramea*, in depths between 48 m and 119 m, were obtained from the remains caught in the trammel nets of fishermen. The infralittoral samples in depths between 2 m and 15 m, were obtained by dredging, scuba-diving and unaided diving. In the mid-littoral zone samples were collected by hand.

Accurate information about the microtubercles of the elytra in the Polynoidae is important for identification, and we examined this character with the scanning electron microscope (Fig. 2A-F). Furthermore, drawings and measurements were made using a microscope with differential interference-contrast optics.

The material examined is deposited in the Department of Animal Biology (Zoology) of the University of La Laguna (DZUL), the Insular Museum of Natural Science in Santa Cruz de Tenerife (TFMC) and the private collection of J. Núñez (JN).

The types are deposited in the Museo Insular de Ciencias Naturales de Santa Cruz de Tenerife (TFMC).

Family POLYNOIDAE Kinberg, 1856
[* indicates species new for Canarian fauna;
() Number of specimens collected]
Subfamily Polynoinae Pettibone (in press)
Genus Polynoe Savigny, 1820
*Polynoe scolopendrina Savigny, 1820

Polynoe scolopendrina, Fauvel, 1923: 80, fig. 30a-k. Tebble and Chambers, 1982: 57, figs. 18a-c, 53, 54.

Material. - Canarias: Tenerife, sta. 26(1), 6 m, black sand and rock.

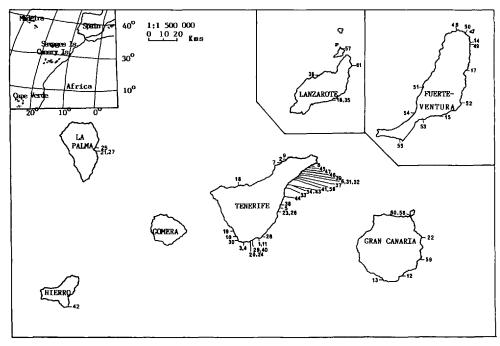


Figure 1. Map of Canary Islands showing stations mentioned in Table 1.

Subfamily Gesiellinae Muir, 1982 Genus Gesiella Pettibone, 1976 Gesiella jameensis (Hartmann-Schröder, 1974)

Macellicephala jameensis Hartmann-Schröder, 1974: 76, figs. 1-8. Núñez, Brito and Bacallado, 1984: 120

Gesiella jameensis, Pettibone, 1976: 64, fig. 36a-i.

Material. - Canarias: Lanzarote, sta. 61(7), 2-4 m, volcanic tube.

Subfamily Lepidonotinae Willey, 1902 Genus Lepidonotus Leach, 1816 Lepidonotus clava (Montagu, 1808)

Lepidonotus clava, Alaejos, 1905: 15, pls. 1, 2. Fauvel, 1923: 46, fig. 16a-e. Sosa, Núñez and Bacallado, 1977: 232, pl. 1A-D, pl. 2A, B. Tebble and Chambers, 1982: 19, figs. 1a, 4a, 24, 25a-c. Campoy, 1982: 81. Kirkegaard, 1983: 193. Núñez, Brito and Bacallado, 1984: 122.

Material.—Canarias: Tenerife, sta. 2(4), 4(4), 5(7), 6(2), 7(5), 10(2), 11(11), 18(1), 19(1), 20(12), 24(2), midlittoral, 2-9 m, rocky shore, muddy and rocky, pool on basalt shore, Cystoseira, Corallina, Jania, Gelidium, photophilic algae, interior of sponge; La Palma, sta. 21(1), 25(1), 27(1), midlittoral, rocky shore; Gran Canaria, sta. 12(1), 13(5), 22(1), 59(1), 60(8), midlittoral, algae on rocky shore, calcareous crusts, Ircinia, crevices in basaltic rocks; Fuerteventura, sta. 14(2), 17(2), 48(1), 49(1), 50(1), 52(1), midlittoral, 2-10 m, crevices in basaltic rocks, rocky, Verongia aerophoba, Caulerpa-Cymodocea, Ircinia; Lanzarote, sta. 16(4), 35(2), 57(1), 61(8), midlittoral, 2-4 m, rocky shore, sandy-stony.

Subfamily Lepidastheniinae Pettibone, 1989 Genus Lepidasthenia Malmgren, 1867 *Lepidasthenia sp.

Material.—Canarias: Tenerife, sta 28(1), 30(1), 5-7 m, midlittoral, course sand, sand-stone, rocky shore.

Table 1. List of stations on Canary coasts

Station	Substrata	Locality		Depth	Date
1	Corallina	La Tejita	(T)	0 m	08-03-1975
2	rocky shore	Bajamar	(T)	0 m	25-03-1975
3	black sand and rock		(T)	5 m	27-03-1975
4	rocky shore	Las Galletas	(T)	0 m	27-03-1975
5	rocky shore		(T)	0 m	28-03-1975
6 7	muddy and rocky		(T)	2 m	11-07-1975
8	Cystoseira sandy and rocky	Playa Jover Las Teresitas	(T) (T)	0 m 3 m	13-07-1975 17-07-1975
9	pool on basalt shore	Punta Hidalgo	(T)	0 m	17-07-1975
10	pool on basalt shore	Los Cristianos	(T)	0 m	18-09-1975
11	Corallina, Jania		(T)	0 m	04-04-1976
12	algae on rocky shore		(Ċ)	0 m	13-04-1976
13	calcareous crusts	Arguineguín	(C)	0 m	14-04-1976
14	crevices in basaltic rocks	Punta Porís	(F)	0 m	26-12-1976
15	Corallina, Jania	Gran Tarajal	(F)	0 m	28-12-1976
16	rocky shore	Arrecife	(L)	0 m	29-12-1976
17	crevices in basaltic rocks		(F)	0 m	31-12-1976
18	Gelidium	San Marcos	(T)	0 m	09-05-1977
19	photophilic algae	Las Américas	(T)	0 m	27-06-1977
20 21	photophilic algae	Los Abrigos	(T)	0 m 0 m	28-08-1977
22	rocky shore rocky shore	Los Cancajos Melenara	(P) (C)	0 m	03-09-1977 04-09-1977
23	black sand and rock	Los Abades	(T)	3-6 m	08-09-1977
24	interior of sponge	Los Abrigos	(T)	4-9 m	11-09-1977
25	rocky shore		(P)	0 m	10-03-1978
26	black sand and rock		(T)	6 m	14-04-1978
27	rocky shore	Los Cancajos	(P)	0 m	05-06-1978
28	coarse sand, sand-stone	El Médano	(T)	5-7 m	11-11-1978
29	sand-stone	Agua Dulce	(T)	6 m	11-03-1979
30	rocky shore	Pall-Mar	(T)	0 m	15-07-1980
31	Dendrophyllia ramea	Barranco Hondo	(T)	113 m	09-12-1980
32	Dendrophyllia ramea		(T)	119 m	24-12-1980
33	Dendrophyllia ramea	Playa la Viuda	(T)	82 m	02-01-1981
34	Dendrophyllia ramea	Candelaria	(T)	100 m	06-02-1981
35	rocky shore	Arrecife	(L)	0 m	13-12-1981
36	rocky shore	La Santa	(L)	0 m	16-12-1981
37	Dendrophyllia ramea	Tabaiba	(T)	108 m	23-01-1982
38 39	Dendrophyllia ramea Dendrophyllia ramea	Las Eras Sta. Ma del Mar	(T)	113 m 107 m	17-02-1982 27-02-1982
40	sand and gravel		(T) (T)	107 m	20-03-1982
41	Dendrophyllia ramea	Las Caletillas	(T)	102 m	01-14-1982
42	rock with Spondylus		(H)	5 m	07-04-1982
43	Dendrophyllia ramea	Candelaria	(T)	82 m	14-04-1982
44	Caulerpa, Sargasum	Punta de Güímar		53 m	15-04-1982
45	muddy	La Dársena	(T)	9 m	19-07-1982
46	interior of sponge	Muelle Honduras		43 m	22-07-1982
47	sandy-stony		(T)	5 m	29-07-1982
48	rocky shore	Morro la Vieja	(F)	0 m	16-09-1982
49	Verongia aerophoba	Los Lavaderos	(F)	2-3 m	17-09-1982
50	Caulerpa-Cymodocea	Corralejo	(F)	8 m	18-09-1982
51	sandy-stony		(F)	0 m	19-09-1982
52	rocky		(F)	10 m	19-09-1982
53	Ircinia		(F)	0 m	21-09-1982
54	Valonia utricularis	Istmo la Pared	(F)	0 m	21-09-1982
55	stony	Morro Jable	(F)	0 m	22-09-1982
56	Dendrophyllia ramea	Las Caletillas	(T)	48 m	03-02-1983
57 58	sandy-stony		(L)	0 m	28-03-1983
58 59	sandy-stony <i>Ircinia</i>		(C)	4 m	04-10-1983
60	crevices in basaltic rocks	Arinaga Las Canteras	(C) (C)	0 m 0 m	12-07-1986
61	volcanic tube	Cueva tres Lagos		2-4 m	13-12-1986 04-04-1989
	P = Lo Polmo G = Lo Comero H = El		• •		

T = Tenerife, P = La Palma, G = La Gomera, H = El Hierro, C = Gran Canaria, F = Fuerteventura, L = Lanzarote (Fig. 1), S/C = Santa Cruz.

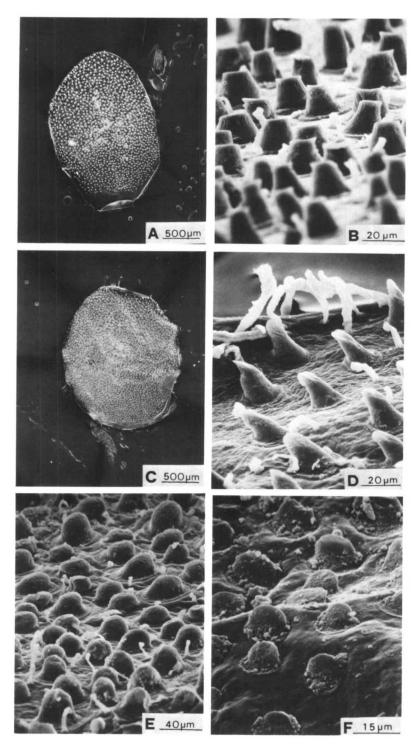


Figure 2. Middle elytra and surface microtubercles (SEM photographs): A, B, Harmothoe cascabullicola, holotype; C, D, H. goreensis; E, H. gilchristi; F, H. spinifera.

Subfamily Alentiinae Pettibone (in press) Genus Alentia Malmgren, 1865 Alentia gelatinosa (Sars, 1835)

Alentia gelatinosa, Hartmann-Schröder, 1971: 45, fig. 10a-d. Tebble and Chambers, 1982: 65, figs. 21, 57a-d. Núñez, Brito and Becallado, 1984: 121.

Material. - Canarias: Tenerife, sta. 33(2), 34(1), 41(2), 43(1), 82-102 m, Dendrophyllia ramea.

Subfamily Arctoninae Hanley, 1989 Genus Adyte Saint-Joseph, 1899, emend. Pettibone, 1969 *Adyte cf. assimilis (McIntosh, 1874)

Adyte assimilis, Pettibone, 1969: 5, figs. 2a-f, 3a-g. Tebble and Chambers, 1982: 62 figs. 20a, b 56a. Baratech and San Martín, 1987: 39, fig. 1A, B.

Material. - Canarias: Tenerife, sta. 39(1), 107 m, Dendrophyllia ramea.

Subfamily Harmothoinae Willey, 1902 Genus Subadyte Pettibone, 1969 Subadyte pellucida (Ehlers, 1864)

Scalisetosus pellucidus, Fauvel, 1923: 74, fig. 27a-f. Subadyte pellucida, Pettibone, 1969: 8, fig. 4a-e. Núñez, Brito and Bacallado, 1984: 121. Adyte pellucida, Tebble and Chambers, 1982: 63, figs. 5a, 20c, d, 56b.

Material.—Canarias: Tenerife, sta. 8(1), 9(1), 44(18), 45(1), 56(1), 3-53 m, sand and rocks, muddy, pool on basalt shore, Caulerpa, Sargassum, Dendrophyllia ramea.

Genus Harmothoe Kinberg, 1865 Harmothoe areolata (Grube, 1860)

Harmothoe areolata, Fauvel, 1923: 62, fig. 52a-e. Sosa, Núñez and Bacallado, 1977: 233, pl. 3A-D. Campoy, 1982: 59. Núñez, Brito and Bacallado, 1984: 121.

Material.—Canarias: Tenerife, sta. 8(6), 28(1), 40(1), 47(1), 3-15 m, sand and rocky, coarse sand, sand-stones, sand and gravel; Gran Canaria, sta. 58(1), 4 m, sandy-stony; Lanzarote, sta. 36(1), midlittoral, rocky shore.

Harmothoe extenuata (Grube, 1840)

Lagisca extenuata, Fauvel, 1923: 70, fig. 28a-k. Campoy, 1982: 56, Núñez, Brito and Bacallado, 1984: 120.

Harmothoe extenuata, Alaejos, 1905: 55, pl. 9, fig. 8, pl. 10, figs. 1-12, pl. 11, fig. 1. Tebble and Chambers, 1982: 34, figs. 10, 34a-c.

Material. - Canarias: Tenerife, sta. 34(1), 100 m, Dendrophyllia ramea.

*Harmothoe gilchristi Day, 1960 Figure 2E

Harmothoe gilchristi, Day, 1967: 68, fig. 1.10a-e.

Material. - Canarias: Tenerife, sta. 31(1), 113 m, Dendrophyllia ramea.

*Harmothoe goreensis Augener, 1918 Figure 2C, D

Harmothoe goreensis, Day, 1967; fig. 1.9n-r. Kirkegaard, 1983; 191.

Material. - Canarias: Tenerife, sta. 34(1), 37(3), 100-108 m, Dendrophyllia ramea.

*Harmothoe flaccida (Potts, 1910)

Lagisca flaccida Potts, 1910: 339, pl. 18, fig. 11, pl. 21, figs. 49, 50. Rullier, 1964: 127.

Material. - Canarias: Tenerife, sta. 9(1), midlittoral, pool on basalt shore.

Harmothoe lunulata (Delle Chiaje, 1822)

Harmothoe lunulata, Fauvel, 1923: 70, fig. 26a-h. Tebble and Chambers, 1982: 51, figs. 16e-g, 48, 49. Núñez, Brito and Bacallado, 1984: 121.

Material.—Canarias: Tenerife, sta. 3(1), 6(2), 29(1), 2-6 m, black sand and rock, muddy and rock, sandy-stone; Fuerteventura, sta. 51(1), midlittoral, sandy-stony.

*Harmothoe imbricata (Linnaeus, 1767)

Harmothoe imbricata, Fauvel, 1923: 55, fig. 18f-l. Tebble and Chambers, 1982: 30, figs. 7a, 9a, b, 31. Campoy, 1982: 61, pl. 3a-g.

Material. - Canarias: Tenerife, sta. 23(1), 3-6 m, black sand and rocks.

*Harmothoe impar (Johnston, 1839)

Harmothoe impar, Alaejos, 1905: 60, pl. 10, figs. 13-16, pl. 11, figs. 2-16. Fauvel, 1923: 59, fig. 21a-f. Tebble and Chambers, 1982: 40, figs. 7b, 12b, c, 38a, b. Campoy, 1982: 63.

Material. - Canarias: Tenerife, sta. 39(1), 107 m, Dendrophyllia ramea.

*Harmothoe glabra (Malmgren, 1865)

Harmothoe glabra, Tebble and Chambers, 1982: 55, figs. 17c-e, 51, 52. Harmothoe setosissima, Alaejos, 1905: 52, pl. 8, figs. 1-3, pl. 9, figs. 1-7.

Material. - Canarias: Tenerife, sta. 38(1), 46(1), 43-113 m, Dendrophyllia ramea, interior of sponge.

Harmothoe spinifera (Ehlers, 1864) Figure 2F

Harmothoe spinifera, Alaejos, 1905: 41, pl. 5, figs. 8-10, pl. 6, figs. 1-6. Fauvel, 1923: 64, fig. 23f-1. Tebble and Chambers, 1982: 28, figs. 8a-c, 20. Campoy, 1982: 72, pl. 4a-g. Núñez, Brito and Bacallado, 1984: 121.

Material. — Canarias: Tenerife, sta. 1(2), 6(2), 11(2), 20(7), 24(4), 2–9 m, midlittoral, Corallina, Jania, muddy and rock, photophilic algae, interior of sponge; Fuerteventura, sta. 42(3), 5 m, rocky with Spondylus.

Harmothoe cascabullicola new species Figures 2A, B, 3A-K

Material. - Canarias: Tenerife, sta. 32(2), Barranco Hondo, 119 m, Dendrophyllia ramea, holotype and paratype (TFMC).

Description.—Holotype ovigerous female, 17 mm long and 6.5 mm wide, including setae, with 38 segments. Body rectilinear tapering anteriorly and posteriorly, slightly arched dorsally and flattened ventrally; preserved color yellowish green with areas of dark pigmentation on elytra, antennae and cirri with dark pigmented bands. The ceratophores and facial tubercle show a darker coloration.

Elytra 15 pairs on segments 2, 4, 5, alternate segments to 23, 26, 29, 32, with dorsal cirri on posterior segments. Elytra large, overlapping, covering dorsum, attached on prominent elytrophores. First pair rounded, rest oval, with well developed fringe of digitiform soft papillae on lateral and posterior borders (Fig. 3I, A2); elytral surface covered with numerous microtubercles, truncate conical shape,

also filiform soft papillae on surface (Fig. 2B, 3J). Dorsal cirri on segments lacking with cirrophores and distal cylindrical styles long, with tips filiform and covered with digitiform papillae (Fig. 3E).

Prostomium bilobed, with well developed divergent cephalic peaks; two pairs of eyes, anterior pair lateral, slightly anterior to widest part of prostomium, posterior pair slightly smaller than anterior pair. Ceratophore of median antenna in anterior notch with long style, two times length of prostomium, lateral antennae with very short styles, two and one half times shorter than length of prostomium, ceratophores inserted ventrally (Fig. 3A). Antennae covered with short papillae. Palps tapering, long, and one half times length of prostomium. First or tentacular segment fused to prostomium, not visible dorsally; tentaculophores lateral to prostomium, with acicula and two setae, each with pair of tentacular cirri, subequal in length, similar shape to dorsal cirri and median antenna. Distinct facial tubercle and small nuchal fold. Second or buccal segment with first pair of large elytrophores, biramous parapodia, and ventral buccal cirri attached basally prominent cirrophores lateral to ventral mouth with styles similar to tentacular cirri, larger than following ventral cirri.

Parapodia biramous, with greater development of neuropodium; notopodium consisting of rounded lobe; neuropodium consisting of elongated conical presetal acicular lobe, with supraacicular process, and shorter rounded postsetal lobe (Fig. 3E). Notosetae yellowish, thicker than neurosetae, with transversal spinous rows (8–9 rows in length of $100~\mu m$), bare tip blunt with vertical incision (length of the tips $20-22~\mu m$) (Fig. 3B, C). Neurosetae of second segment unidentate and bidentate, thinner and more spinous than present in remaining segments. From third segment, upper unidentate neurosetae (1–3) are longer and straighter with 26 groups of spines (Fig. 3D, K). Neurosetae of mid-segments (25 on parapodium 16), secondary tooth long and straight reaching two thirds the length of slightly curved main tooth, with bare tips (50 μm), showing distal thickening (30 μm); spinous regions with up to 16 groups of spines (Fig. 3F, G). Lower neurosetae shorter, unidentate (1–3), with slightly curved tips, up to 14 groups of spines (Fig. 3H).

Remarks.—This species differs in the form of the elytral truncate conical microtubercles and very well developed divergent prostomial peaks. Similar species such as *Harmothoe viridis* Loshamn, 1981 (Loshamn, 1981) and *Harmothoe goreensis* Augener, 1918 (Day, 1967) differ from *H. cascabullicola* in the type of elytral microtubercles.

Etymology.—The specific name refers to the type of samples where it has been found, called "cascabullo," which are remains of corals and other sessile organisms, caught in the nets of fishermen.

Ecological Data.—Circa-littoral species, collected at a depth of 119 m from a seabed in the community of Dendrophyllia ramea (orange-colored coral).

Distribution. - Tenerife, Canary Islands.

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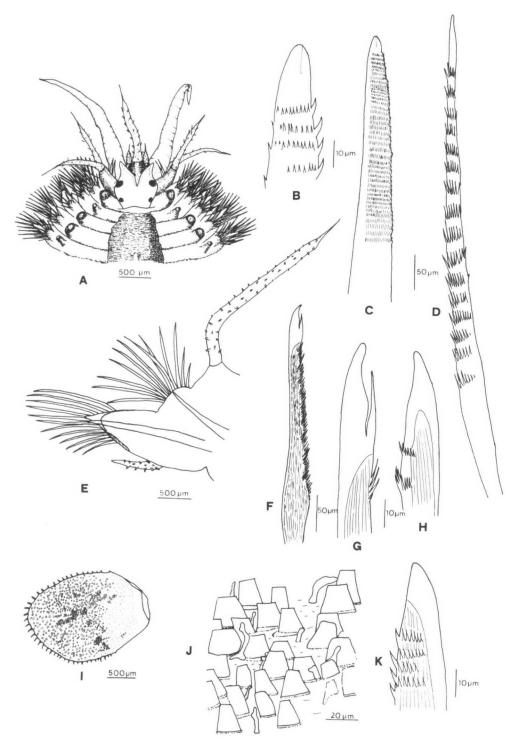


Figure 3. Harmothoe cascabullicola, Holotype: A, anterior end, dorsal view; B, tip of middle notoseta; C, middle notoseta; D, upper neuroseta; E, left cirrigerous parapodium of middle segment, posterior view; F, middle neuroseta; G, tip of middle neuroseta; H, tip of lower neuroseta; I, elytrum from middle segment; J, elytral truncate conical microtubercles and papillae; K, tip of upper neuroseta.

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Addresses: (M.C.B.; J.N.) Departamento de Biología Animal (Zoología), Universidad de la Laguna, 38206 La Laguna, Tenerife, Canary Islands (Spain); (J.J.B.) Museo Insular de Ciencias Naturales de Santa Cruz de Tenerife (TFMC), Tenerife, Canary Islands (Spain).